Commonwealth of Virginia
Department of Medical Assistance Services

2007 Focused Study Report: Asthma

Prepared by

MPRO

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Virginia's External Quality Review Organization

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Executive Summary

The Michigan Peer Review Organization (MPRO) conducted this focused study for use of appropriate medications for people with persistent asthma for the Commonwealth of Virginia, Department of Medical Assistance Services (DMAS), for services provided during calendar year 2007. Results of the review of care provided to Family Access to Medical Insurance Security (FAMIS) enrollees in contracted managed care organizations (MCOs), Primary Care Case Management (PCCM), and the State's fee-for-service (FFS) delivery system are provided in this report.

Specifications

MPRO used the Healthcare Effectiveness Data and Information Set (HEDIS®) measure of *Use of Appropriate Medications for People with Asthma* to assess the extent to which SCHIP children and adolescents with persistent asthma are receiving appropriate medications for treatment. To be included in the denominator for this measure, a person must have persistent asthma. In 2006, the measure specification changed to require enrollees to meet one of three criteria during both the measurement year and the year prior to the measurement year to be included in the denominator. This change may contribute to increased rates from 2005 to 2006 because enrollees with "persistent asthma" based on the more stringent definition, are more likely to receive asthma medication.

Disease Characteristics

Asthma can cause severe health problems, but in most cases, the condition can be managed with proper treatment and self-management. This disease causes airways to become blocked or narrowed causing shortness of breath, breathing trouble, and sometimes, severe episodes requiring emergency treatment. Long-term control medications are necessary to prevent exacerbations and chronic symptoms for all patients with persistent asthma, whether the condition is mild, moderate, or severe.[1]

Results

Since 2006, the rate for use of appropriate medications for people with persistent asthma increased from 92% to 97% for children aged 5 – 9 years, but decreased by nearly the same amount for enrollees aged 10 – 17 years. The rates for combined ages have been stable over the past three years, moving approximately one percentage point each year. The MCOs' high performance for this measure leaves very little room for improvement, but demonstrates the need to aim toward sustaining the high rates. Rates for both age ranges, for all three years, have been

[1] National Heart, Lung, and Blood Institute. Key Clinical Activities for Quality Asthma Care. Recommendations of the National Asthma Education and Prevention Program.

above the HEDIS® 2008 mean. As indicated in the summary table below, the 2007 rate of 97% for children aged 5 – 9 years was above both the HEDIS® 2008 Medicaid average and the 90th percentile.

Table A. Summary of Study Results – 2007

Age Range	2007	HEDIS® 2008 National Medicaid Average	HEDIS® 2008 National Medicaid 90th Percentile
5 – 9 years	97.2%	89.2%	95.8%
10 – 17 years	90.4%	86.8%	93.3%
Total	93.0%	NA	NA

Comparison by delivery system for children aged 5 – 9 years shows notable changes. In 2007, the MCO rate was six percentage points above the FFS rate. The rate for enrollees in PCCM, aged 5 – 9 years, was four percentage points below the FFS rate and 10 percentage points less than the MCO rate.

Comparisons of rates between SCHIP populations by age range and by year do not reveal any consistent patterns or trends.

Summary

A patient's ability to take asthma medications is a necessary skill of self-management. Patients and parents/guardians of children with asthma need to know the rationale behind daily long-term and quick-relief medications, how to take medications correctly, and how to adjust the dosage if asthma symptoms occur.[2] The results for this asthma-related measure – use of appropriate medications for people with persistent asthma – continue to reflect high performance relative to the HEDIS® 2008 national Medicaid average.

[2] Morbidity and Mortality Weekly Report (MMWR): Recommendations and Reports, Vol. 52/No. RR-6, March 28, 2003. National Asthma Education and Prevention Program.

Chapter 1 – Focused Study Overview

Introduction

The Commonwealth of Virginia, Department of Medical Assistance Services (DMAS) is responsible for the provision of healthcare to the thousands of children enrolled in Medicaid in the Commonwealth of Virginia. Approximately 36% of children aged zero – 20 years in the state Medicaid program are enrolled in one of five managed care organizations who contract with physicians to provide timely, appropriate well-child care to these enrollees. DMAS contracted with the Michigan Peer Review Organization (MPRO) to conduct focused studies of care provided to the Medicaid managed care enrollees in five managed care organizations (MCOs). The focused studies also reviewed care provided to enrollees in the fee-for-service (FFS) and Primary Care Case Management (PCCM) delivery systems. The majority of Medicaid enrollees (58%) aged 0 – 20 years are in FFS and the remaining 6% are in PCCM. DMAS selected five topics for focused studies: Well-Child and Adolescent Well Care, Immunizations; Access to Primary Care Practitioners (PCPs); Use of Appropriate Medications for People with Persistent Asthma; and Prenatal Care.

This report provides results for Use of Appropriate Medications for People with Persistent Asthma. MPRO used Healthcare Effectiveness Data and Information Set (HEDIS®) technical specifications as the basis for selection and analysis.[1] Data analysis was performed using the SAS™ System for Windows. Study results are reported by program (population) and delivery system.

Programs (Population)

Virginia's State Children's Health Insurance Program (SCHIP), is called the Family Access to Medical Insurance Security (FAMIS), and is authorized under Title XXI of the Social Security Act for low-income people. FAMIS is financed by Federal (65%) and State (35%) funds and administered by DMAS in accordance with Federal and State guidelines. DMAS created FAMIS in 2001 to provide health insurance coverage to low income children whose families' incomes are too high to qualify for Medicaid. FAMIS covers eligible children (who are not eligible for Medicaid, are not covered under health insurance, and are not members of a family eligible for coverage under the State employee health plan). FAMIS provides coverage to children up to age 19 in households with incomes ranging from 133% to 200% of the federal poverty level (FPL). Enrollee eligibility aid categories 006, 007, 008, and 009 are included in the FAMIS program.

Virginia operates a combination SCHIP program that includes the Medicaid Expansion component that is funded under Title XXI. The Medicaid Expansion program covers children ages 6 through 19 in households with incomes ranging from 100% to 133% of FPL (children younger than six years of age within this FPL range are covered by Medicaid). For this study, SCHIP Medicaid Expansion is defined as enrollees in eligibility aid category 094.

[1] National Committee for Quality Assurance (NCQA), HEDIS 2008: Vol. 2: Technical Specifications. Washington, DC: NCQA; 2007.

Delivery Systems

The focused study reviewed care provided to enrollees in both FAMIS and SCHIP Medicaid Expansion programs. The focused study used three delivery system classifications to report findings:

1. Fee For Service (FFS) – primary care providers are paid directly by DMAS on a FFS basis.
2. Primary Care Case Management (PCCM) Program (MEDALLION) – managed care.
3. Managed Care Organization – recipients are enrolled in one of five MCOs (Medallion II) – managed care.

Methodology

This study reports results for members aged 5 – 9 and 10 – 17 years identified as having persistent asthma. Administrative HEDIS® methodology was used to determine rates for prescription of appropriate medications. Selection parameters used to define the population included in the asthma focus study are shown in Table 1.

Table 1. Selection Parameters for Asthma Focused Study

Program Types	FAMIS (Enrollee Eligibility Aid Category = 006, 007, 008, 009) SCHIP Medicaid Expansion (Enrollee Eligibility Aid Category = 094)
Delivery Systems	FFS (Benefit Definition Plan Subprogram Code = 01) PCCM (MEDALLION) (Benefit Definition Plan Subprogram Code = 02, 07) MCO (Medallion II) (Benefit Definition Plan Subprogram Code = 03, 04)
Enrollment Criteria	Minimum of 24 months continuous enrollment within the same delivery system and program during calendar years 2006 and 2007
Diagnosis	ICD-9 Code 493 in conjunction with specific prescriptions
Age	5 – 9 years, 10 – 17 years
Sex	Male, Female
Office Visit Requirement	Not applicable
Review Period	1/1/2007 – 12/31/2007

To be included in the denominator for this measure, a person must have persistent asthma. In 2006, the measure specification changed to require enrollees to meet one of three criteria during both the measurement year and the year prior to the measurement year to be included in the denominator. This change may contribute to increased rates from 2005 to 2006 because enrollees with "persistent asthma" based on the more stringent definition are more likely to receive asthma medication. The specifications define persistent asthma when a person meets any of the criteria listed below[2] during both the measurement year and the year prior to the measurement year, combined:

1. Received four prescriptions for an asthma medication
2. Had at least four ambulatory visits with asthma as one of the diagnosis codes and at least two prescriptions for an asthma medication

[2] Appendix A provides applicable codes specified by HEDIS®.

3. Had at least one inpatient stay or emergency room visit with a primary diagnosis code of asthma

The numerator includes people who were dispensed at least one prescription for any of the following five medication classes:

- Inhaled corticosteroids
- Nedocromil
- Cromolyn sodium
- Leukotriene modifiers
- Methylxanthines

Because asthma medications containing leukotriene modifiers are commonly dispensed for non–asthma-related conditions, such as the treatment of preterm labor, those members identified as having persistent asthma due to at least four asthma medication dispensing events, with leukotriene modifiers the sole asthma medication dispensed, must also meet any of the other two criteria above or have at least one diagnosis of asthma in any setting in the same year as the leukotriene modifier (i.e., measurement year or year prior to measurement year). People were also excluded from the eligible population if diagnosed with emphysema or chronic obstructive pulmonary disease any time on or prior to December 31, 2007.

Reporting Results

NCQA publishes Quality Compass® using audited HEDIS® results from health organizations. Quality Compass® allows users to conduct competitor analysis, examine quality improvement and benchmark plan performance. Benchmarks used in this report are from Quality Compass® for the Medicaid population for 2007 dates of service.[3] Non-statistical comparison is made to the national Medicaid HEDIS® mean (average) for 2008, which is based on 2007 service dates, referred to in the report as the "HEDIS® 2008 national Medicaid average".

This report compares 2007 rates to rates from prior year studies. Rates for 2005, 2006, and 2007 are based on a calendar year. The sources for prior year information are:

- Information for 2004 is from the Commonwealth of Virginia Clinical Study – FAMIS for 2004.
- Information for 2005 is from MPRO's FAMIS Focused Study Report – Calendar Year 2005, published in April 2007.
- Information for 2006 is from MPRO's Focused Quality Studies Report – Calendar Year 2006, published in June 2008.

[3] The source for data contained in this publication is Quality Compass® 2008 and is used with the permission of the NCQA. Any analysis, interpretation, or conclusion based on these data is solely that of the authors, and NCQA specifically disclaims responsibility for any such analysis, interpretation, or conclusion. Quality Compass® is a registered trademark of NCQA.

Chapter 2 – Focused Study Results

Introduction

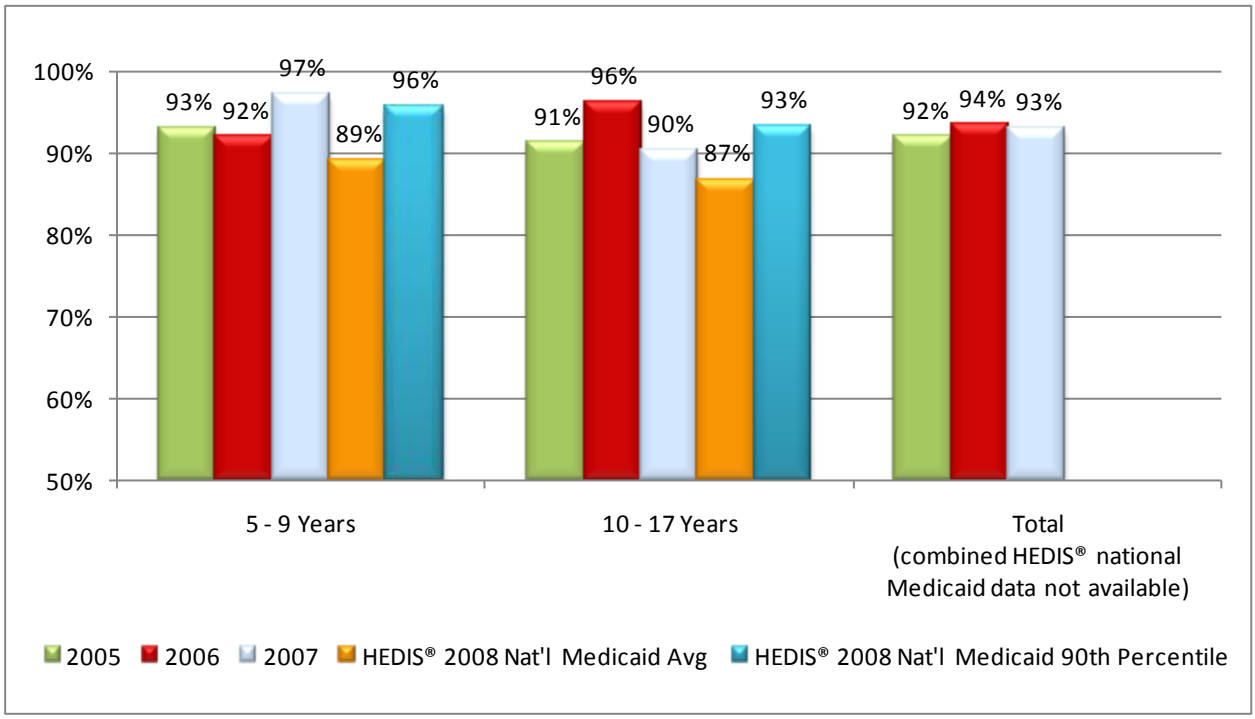
Asthma can cause severe health problems, but in most cases it can be controlled with treatment. This disease causes airways to become blocked or narrowed causing shortness of breath, breathing trouble, and sometimes severe episodes requiring emergency treatment. The National Health Interview Survey reported that 11% of children aged 5 – 17 currently have asthma.[6] According to the 2006-2007 Virginia Medicaid Managed Care Organization Performance Report, 9% of children living in Virginia have asthma, and the prevalence is higher for those with low incomes (14.5%).[7] Long-term control medications are necessary to prevent exacerbations and chronic symptoms for all patients with persistent asthma, whether the persistent asthma is mild, moderate, or severe.[8] The HEDIS® measure of *Use of Appropriate Medications for People with Asthma*, was used to assess the extent to which SCHIP children and adolescents with persistent asthma are receiving appropriate medications for treatment.

Focused Study Results

As shown in Figure 1, the rate for use of appropriate medications for people with persistent asthma increased from 92% to 97% for children aged 5 – 9, but decreased by about the same amount for those aged 10 – 17 years. The rates for combined ages have been stable over the past three years moving only one percentage point each year. Rates for both age ranges, for all three years, have been above the HEDIS® 2008 national Medicaid average. The 2007 rate of 97% for children aged 5 – 9 years was higher than the HEDIS® 2008 national Medicaid 90th percentile by one percentage point.

[6] Bloom B, Cohen RA. Summary Health Statistics for U.S. Children: National Health Interview Survey, 2006. National Center for Health Statistics. Vital Health Stat 10(234). 2007.
[7] Virginia Medicaid Managed Care Organization Performance Report 2006-2007. December 2007.
[8] National Heart, Lung, and Blood Institute. Key Clinical Activities for Quality Asthma Care. Recommendations of the national Asthma Education and Prevention Program.

Figure 1. Rate of Use of Appropriate Medications for People with Persistent Asthma



Indicator # 1

The percentage of children with persistent asthma who received appropriate medication.

Rates of use of appropriate medications for asthma for enrollees in FFS and in managed care are similar for combined age ranges from 2005 to 2007. In 2005 and 2007, the MCO rate was slightly higher, but in 2006 the MCO rate was less than the FFS rate. The rate increased by just over nine percentage points from 2006 to 2007 for children aged 5 – 9 years. There were greater differences between rates for the two age ranges in 2007 than in prior years; the combined rate varied by seven percentage points between enrollees aged 5 – 9 (97.2%) and those aged 10 – 17 years (90.4%) in rates between the age ranges.

Comparison by delivery system for children aged 5 – 9 years shows notable changes. In 2007, the MCO rate was six percentage points above the FFS rate for children. The rate for enrollees in PCCM, aged 5 – 9 years, was four percentage points below the FFS rate and 10 percentage points less than the MCO rate.

Table 2. Use of Appropriate Medications for Asthma by Delivery System (FAMIS + SCHIP Medicaid Expansion Combined)

	FFS			MCO		
Age Range	2005	2006	2007	2005	2006	2007
5 – 9 years	**90.2%**	**93.2%**	**93.0%**	**95.3%**	**89.9%**	**99.1%**
Num / Den	46 / 51	68 / 73	66 / 71	41 / 43	134 / 149	228 / 230
10 – 17 years	**90.7%**	**94.3%**	**91.0%**	**91.1%**	**97.0%**	**90.1%**
Num / Den	68 / 75	50 / 53	122 / 134	72 / 79	65 / 67	290 / 322
Total	**90.5%**	**93.7%**	**91.7%**	**92.6%**	**92.1%**	**93.8%**
Num / Den	114 / 126	118 / 126	188 / 205	113 / 122	199 / 216	518 / 552

Table 2. Use of Appropriate Medications for Asthma by Delivery System (continued)

	PCCM			Combined		
Age Range	2005*	2006*	2007	2005	2006	2007
5 – 9 years	**100%**	**100%**	**88.9%**	**93.1%**	**92.0%**	**97.2%**
Num / Den	7 / 7	29 / 29	16 / 18	94 / 101	231 / 251	310 / 319
10 – 17 years	**100%**	**100%**	**90.5%**	**91.3%**	**96.2%**	**90.4%**
Num / Den	7 / 7	12 / 12	38 / 42	147 / 161	127 / 132	450 / 489
Total	**100%**	**100%**	**90.0%**	**92.0%**	**93.5%**	**93.0%**
Num / Den	14 / 14	41 / 41	54 / 60	241/ 262	358 / 383	760 / 817

**Denominators too small to support any conclusions.*

Rates for appropriate medications for people with persistent asthma by SCHIP population are provided in Table 3 by age range and across years. Comparison of rates between programs by age range and by year do not reveal any consistent patterns or trends. Increases in one year are followed by decreases in subsequent years; sometimes rates for enrollees in FAMIS exceed results for SCHIP Medicaid Expansion, but looking at another year or by age range will show SCHIP Medicaid Expansions rates to be higher than FAMIS. The inconsistent results make it difficult to draw any conclusions relative to performance by program.

Table 3. Use of Appropriate Medications for People with Persistent Asthma by Population

	FAMIS				SCHIP Medicaid Expansion				HEDIS® 2008 National Medicaid	
Age Range	2004	2005	2006	2007	2004	2005	2006	2007	Mean	90th Percentile
5 – 9 years	80.4%	94.9%	92.8%	97.2%	87.5%	87.0%	91.4%	97.0%	89.2%	95.8%
10 – 17 years	79.3%	89.9%	98.8%	88.3%	70.1%	94.2%	91.5%	92.4%	86.8%	93.3%

Summary and Conclusions

A patient's ability to take asthma medications is a necessary skill of self-management. Patients and parents/guardians of children with asthma need to know the rationale behind daily long-term and quick-relief medications, how to take medications correctly, and how to adjust the dosage if asthma symptoms occur.[9] The results for this asthma-related measure continue to reflect high performance compared to national benchmarks. Rates for both age groups in every delivery system and programs are above the HEDIS® national Medicaid average.

Opportunities for Improvement

As DMAS and the Virginia MCOs explore ways to maintain high performance in key indicators of the quality of asthma management, they may benefit from increasing collaborative efforts with the Virginia Department of Health which participates with the CDC's National Asthma Control Program. The CDC also funds efforts to build the capacity of state and local health and education agencies to support and address school-based asthma management activities. "Strategies for Addressing Asthma Within a Coordinated School Health Program" is a web-based, CDC–developed guidance document that offers concrete suggestions for schools working to improve the health and school attendance of students with asthma.

[9] Morbidity and Mortality Weekly Report (MMWR): Recommendations and Reports, Vol. 52/No. RR-6, March 28, 2003. National Asthma Education and Prevention Program.

A recent study proved that when managed care programs inform health care providers that a child has had a serious asthmatic episode, the provider tends to take action by writing prescriptions for asthma medications to prevent recurrence of the episode.[10] Medical management of asthma can be complex and it often requires asthmatic patients to follow complicated treatment regimens and implement difficult behavioral changes. However, good medical and patient self-management usually result in improved quality of life and reduced symptomology.[11]

[10] Cooper, Ray, Arbogast, P. et al. Health plan notification and feedback to providers is associated with increased filling of preventer medications for children with asthma. Journal of Pediatrics 152(4), pp. 481-488.
[11] Asthma in Virginia; a comprehensive data report, 2006. Virginia Department of Health. Division of Chronic Disease Prevention and Control. Virginia Asthma Control Project.

Appendix A – HEDIS® Specification Code Tables

Codes to Identify Emergency Department and Inpatient Encounters		
Description	**CPT Codes**	**UB-92 Revenue Codes**
Acute inpatient	99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99261-99263, 99291, 99292, 99356, 99357	10X-16X, 20X-22X, 72X, 80X, 987
ED services	99281-99285	0450, 0451, 0452, 0981
Outpatient visit	99201-99205, 99211-99215, 99217-99220, 99241-99245, 99271-99275	456, 510, 515-517, 520, 521, 523, 526, 76X, 770, 779, 982, 983, 988

Asthma Medications	
Description	**Prescriptions**
Preferred therapy	▪ Cromolyn sodium ▪ Inhaled corticosteroids ▪ Leukotriene modifiers ▪ Methylxanthines ▪ Nedocromil
Add-on therapy	▪ Long-acting, inhaled beta-2 agonists